



Patent  
Attorney's Docket No. 034100-002  
Application No. 10/791,791

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of )  
Nakao YOSHIHIRO et al. ) Group Art Unit: 1631  
Application No.: 10/791,791 )  
Filed: March 4, 2004 ) Examiner: Not Yet Assigned  
For: SCREENING METHOD FOR GENES OF ) Confirmation No.: 5495  
BREWING YEAST )

**FIRST  
INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure as set forth in 37 C.F.R. § 1.56, the accompanying information is being submitted in accordance with 37 C.F.R. §§ 1.97 and 1.98.

**NON-PATENT DOCUMENTS**

1. GJERMANSEN, C., "Construction of a Hybrid Brewing Strain of *Saccharomyces Carlsbergensis* by Mating of Meiotic Segregants", *Carlsberg Res. Commun.*, 1981, Vol. 46, pp. 1-11, Copenhagen Valby, Denmark.
2. OLESEN, et al., "The Dynamics of the *Saccharomyces carlsbergensis* brewing yeast transcriptome during a production-scale lager beer fermentation", *FEM Yeast Research*, 2000, Vol. 2, pp. 563-573, Elsevier Science, Amsterdam, Holland.

3. BLATTNER, et al., "The Complete Genome Sequence of *Escherichia coli* K-12", *Science*, 1977, Vol. 277, pp. 1453-1462, American Association for the Advancement of Science, Washington, D.C.
4. COLE et al., "Deciphering the biology of Mycobacterium tuberculosis from the complete genome sequence", *Nature*, 1998, Vol. 393, pp. 537-544, Nature Publishing Group, London, England.
5. TAMAI et al., "Co-existence of Two Types of Chromosome in the Bottom Fermenting Yeast, *Sacchaomyces cerevisiae*", *Yeast*, 1998, Vol. 10, pp. 923-933, John Wiley & Sons, Ltd., Chichester, England & New York.
6. KORCH et al., "A mechanism for sulfite production in beer and how to increase sulfite levels by recombinant genetics", *Yeast and Fermentation*, pp. 201-208, 1991.
7. HANSEN, et al., "Inactivation of MET 10 in brewer's yeast specifically increases SO<sub>2</sub> formation during beer production", *Nature Biotechnology*, 1996, Vol. 14, Nature America, New York.
8. SIJEN, et al., "Transcriptional and posttranscriptional gene silencing are mechanistically related", *Current Biology*, 2001, Vol. 11, pp. 436-440, Current Biology, London, England.
9. GOTO-YAMAMOTO et al., "SSU1-R, a Sulphite Resistance Gene of Wine Yeast, is an Allele of SSU1 with a Different

Upstream Sequence", *Journal of Fermentation and Bioengineering*, 1988, Vol. 86, No. 10, pp. 427-433.

10. AVRAM et al., "SSU 1 Encodes a Plasma Membrane Protein with a Central Role in a Network of Proteins Conferring Sulfite Tolerance in *Saccharomyces cerevisiae*", *Journal of Bacteriology*, 1997, Vol. 179, No. 18, pp. 5971-5974, American Society of Microbiology , Washington, D.C.

11. PARK et al., "SSU1 mediates sulphite efflux in *Saccharomyces cerevisiae*", *Yeast*, 2000, Vol. 16, pp. 881-888, John Wiley & Sons, Chichester, England and New York.

12. MARTINI et al., "Deoxyribonucleic Acid Relatedness among Species of the Genus *Saccharomyces* Sensu Stricto", *International Journal of Systematic Bacteriology*, 1985, Vol. 35, No. 4, pp. 508-511.

13. SANGER, F., "Determination of Nucleotide Sequences in DNA", *Science*, 1981, Vol, 214, pp. 1205-1215, American Association for the Advancement of Science, Washington, D.C.

14. GOLDSTEIN et al., "Three New Dominant Drug Resistance Cassettes for Gene Disruption in *Saccharomyces cerevisiae*", *Yeast*, 1999, Vol. 15, pp. 1541-1553, Wiley & Sons, Chichester, England and New York.

16. WATERMAN, M., "Computer Analysis of Nucleic Acid Sequences", *Methods in Enzymology*, 1988, Vol. 164, pp. 765-793, Academic Press, New York.

17. WELLS et al., "Cassette mutagenesis: an efficient method for generation of multiple mutations at defined sites", *Gene*, 1985, Vol. 34, pp. 315-323, Elsevier, Amsterdam, Holland.
18. CARTER, et al., "Improved oligonucleotide site-directed mutagenesis using M13 vectors", *Nucleic Acids Research*, 1985, Vol. 13, No. 12, pp. 4431-4443, Oxford University Press, Oxford, England.
19. KUNKEL, T., "Rapid and Efficient site-specific mutagenesis without phenotypic selection", *Proc. Natl. Acad. Sci. USA*, 1985, Vol. 82, pp. 488-492, National Academy of Sciences, Washington, D.C.
20. BECKER et al., "High-Efficiency Transformation of Yeast by Electroporation", *Methods in Enzymology*, 1991, Vol. 194, pp. 182-187, Academic Press, Inc., New York.
21. HINNEN et al., "Transformation of yeast", *Proc Natl. Acad. Sci. USA*, 1978 Vol. 75, No. 4, pp. 1929-1933, National Academy of Sciences, Washington, D.C.
22. ITO, et al., "Transformation of Intact Yeast Cells Treated with Alkali Cations", *Journal of Bacteriology*, 1983, Vol. 153, No. 1, pp. 163-168, American Society for Microbiology, Washington, D.C.
23. KARIN et al., "Primary structure and transcription of an amplified genetic locus: The CUP1 locus of yeast", *Proc. Natl.*

*Acad. Sci. USA*, 1984, Vol. 81, pp. 337-341, National Academy of Sciences, Washington, D.C.

24. HUSSAIN et al., "Characterization of PDR4, a *Saccharomyces cerevisiae* gene that confers pleiotropic drug resistance in high-copy number", *Gene*, 1991, Vol. 101, pp. 149-152, Elsevier, Amsterdam, Holland.
25. MAKINO et al., "Complete Nucleotide Sequences of 93-kb and 3.3-kb Plasmids of an Enterohemorrhagic *Escherichia coli* O157:H7 Derived from Sakai Outbreak", *DNA Research*, 1998, Vol. 5, pp. 1-9, Kazusa DNA Research Institute & Universal Academy Press, Tokyo, Japan.

Pursuant to 37 C.F.R. § 1.98, a copy of each of the documents cited is enclosed.

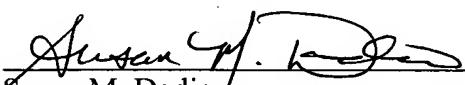
The documents are being submitted with three (3) months of the filing or entry of the national stage of this application or before the first Office Action on the merits, whichever is later. Since these documents are being filed within the time period set forth in 37 C.F.R. § 1.197(b), no fee or statement is required.

To assist the Examiner, the documents are listed on the attached form PTO-1449. It is respectfully requested that an Examiner-initialed copy of this form be returned to the undersigned.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

Date: July 19, 2004

By:   
Susan M. Dadio  
Registration No. 40,373

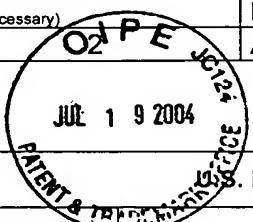
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**FIRST  
INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 1 of 1

<i>Complete if Known</i>	
<b>Application Number</b>	10/791,791
<b>Filing Date</b>	March 4, 2004
<b>First Named Inventor</b>	Yoshihiro Nakao et al.
<b>Examiner Name</b>	
<b>Attorney Docket Number</b>	034100-002

**U.S. PATENT DOCUMENTS**

Examiner Initials	Document Number	Kind Code (if known)	Name of Patentee or Applicant of Cited Document	Issue/Publication Date (MM-DD-YYYY)

**NON-PATENT LITERATURE DOCUMENTS**

Examiner Initials	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	GJERMANSEN, C., "Construction of a Hybrid Brewing Strain of <i>Saccharomyces Carlsbergensis</i> by Mating of Meiotic Segregants", <i>Carlsberg Res. Commun.</i> , 1981, Vol. 46, pp. 1-11, Copenhagen Valby, Denmark.
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	WATERMAN, M., "Computer Analysis of Nucleic Acid Sequences", <i>Methods in Enzymology</i> , 1988, Vol. 164, pp. 765-793, Academic Press, New York.

Examiner Signature	Date Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

Substitute for form 1449A/PTO & 1449B/PTO		<i>Complete if Known</i>	
<b>FIRST</b> <b>INFORMATION DISCLOSURE</b> <b>STATEMENT BY APPLICANT</b>		<b>Application Number</b>	10/791,791
(use as many sheets as needed)		<b>Filing Date</b>	March 4, 2004
		<b>First Named Inventor</b>	Yoshihiro Nakao et al.
		<b>Examiner Name</b>	
Sheet	2	<b>Attorney Docket Number</b>	034100-002

JUL 19 2004

NON-PATENT LITERATURE DOCUMENTS	
Examiner Initials	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	WELLS et al., "Cassette mutagenesis: an efficient method for generation of multiple mutations at defined sites", <i>Gene</i> , 1985, Vol. 34, pp. 315-323, Elsevier, Amsterdam, Holland.
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